

What is claimed is:

1. A sensor comprising:

a first quartz crystal microbalance (QCM) covered by a polymeric coating having a
5 predetermined chemistry;

a second quartz crystal microbalance (QCM) covered by a polymeric coating consisting
essentially of the same predetermined chemistry of said first QCM and wherein said
second QCM is molecularly imprinted, wherein said first and second QCMs have an
output corresponding to a target molecule that is to be detected;

10 subtracting means for comparing the output of said first QCM to the output of said
second QCM to provide a signal that corresponds to the compared level of intensity
between said first and second QCMs; and

recording means for recording the signal provided by said subtracting means.

15 2. The sensor system as claimed in Claim 1 comprising a microprocessor in
communication with said recording means wherein said microprocessor being
programmed to process the signal stored in said recording means such that said
microprocessor indicates the presence of the target molecule even when other molecules
having similar shape and chemistry are also present.

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3. A method for detecting at least one target molecule comprising the steps of:
providing a first and a second quartz crystal microbalance (QCM);

- disposing said first and second quartz crystal microbalance (QCM) in an environment to be monitored;
- coating the surface of the first QCM with a molecular imprinted polymer;
- coating the surface of the second QCM with a non-imprinted polymer;
- 5 comparing the output of said QCM with the output of said QCM to provide a comparison signal;
- recording the comparison signal; and
- processing the comparison signal to provide an indication of the target molecule even in the presence of other molecules having similar shape and chemistry.